

CLAIMS

1. A continuously variable ratio transmission (CVT) comprising:
  - (a) a ratio varying unit ("variator");
  - 5 (b) a first epicyclic having two inputs connected to opposite sides of the variator;
  - (c) a second epicyclic having an input driven by a prime mover and components connected to opposite sides of the variator;
  - (d) a final drive shaft;
  - 10 (e) a low regime clutch for selectively connecting the output of the first epicyclic to the final drive shaft in low regime;
  - (f) a third, mixing, epicyclic connected to the output of the first epicyclic and connected or connectable to the variator and being connectible with the final drive shaft in high regime by way of a high regime clutch;
- 15 wherein the high and low regimes are coincident at at least one variator ratio and the variator operates in opposite directions in the low and high regimes.
  
2. A continuously variable ratio transmission (CVT) as claimed in claim 1, wherein the operation ranges of the high and low regimes overlap.
  
- 20 3. A continuously variable ratio transmission (CVT) comprising:
  - (a) a ratio varying unit ("variator");

- (b) a first epicyclic having two inputs connected to opposite sides of the variator;
- (c) a second epicyclic having an input driven by a prime mover and components connected to opposite sides of the variator;
- 5 (d) a final drive shaft connectible with the variator by way of one of two alternative driven rotatable members connected to opposite sides of the variator respectively; and
- a first clutch disposed between an output of the first epicyclic and the final drive shaft for selectively connecting the output of the first epicyclic to the final drive
- 10 shaft;
- the transmission further comprising:
- a third, mixing, epicyclic disposed between at least one of the driven rotatable members and the final drive shaft and receiving inputs from the output of the first epicyclic and said driven rotatable shaft; and
- 15 a second clutch disposed between said one driven rotatable member and the final drive shaft for selectively connecting the said one driven rotatable member to the final drive shaft via the third epicyclic.
4. A CVT as claimed in claim 3, further comprising a third clutch disposed
- 20 between said other driven rotatable member and the final drive shaft for selectively connecting the said other driven rotatable member to the final drive shaft via the third epicyclic.

5. A CVT as claimed in claim 4, wherein the second and third clutches are disposed respectively between the said one driven rotatable member and the third epicyclic and between the said other driven rotatable member and the third epicyclic.

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6. A CVT as claimed in claim 3, further comprising:

a fourth epicyclic disposed between said other driven rotatable member and the final drive shaft and receiving inputs from the output of the first epicyclic and said other driven rotatable shaft; and

10 a third clutch disposed between said other driven rotatable member and the final drive shaft for selectively connecting the said other driven rotatable member to the final drive shaft via the fourth epicyclic.

7. A CVT as claimed in claim 6, wherein the second and third clutches are  
15 disposed respectively between the third epicyclic and the final drive shaft and the fourth epicyclic and the final drive shaft.